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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/941,132	09/30/1997	YASUYUKI TANAKA	0649-SP0619P	5656

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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

ZITOMER, FRED


ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 12/11/2002

42

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 08/941,132	Applicant(s) Tanaka et al.	
	Examiner Fred Zitomer	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply
 A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Sep 27, 2002

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-3 and 7-27 is/are pending in the application.

4a) Of the above, claim(s) 9-27 is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-3, 7, and 8 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some* c) ☒ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 *See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
 a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____	6) <input type="checkbox"/> Other:

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1.

The request filed on July 17, 2002 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 08/941,132 is acceptable and a CPA has been established. An action on the CPA follows.

2.

Applicant's election with traverse of Group I, claims 1-3, 7 and 8 in Paper No. 41 is acknowledged. The traversal is on the ground that a search and examination can be made without serious burden. This is not found persuasive because the restriction requirement is based on a process of making and product made relationship which applicant has failed to address.

It is agreed, as noted by applicant, that claim 14 is included in Group II.

The requirement is still deemed proper and is therefore made FINAL.

3.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3, 7 and 8 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey

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to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

The expression in claim 1 at line 3, "...either or both of..", added by amendment in Paper No. 21, is new matter. The specification is enabled for a deproteinized rubber modified by grafting or epoxidation but not for a rubber modified by both procedures.

5.

Claims 1-3, 7 and 8 are rejected under 35 U.S.C. § 103 as being unpatentable over Yasuyuki et al., EP 0 584 597, taken with Kondo et al., US 4,208,490, or Burlett et al., US 5,118,546, or Hayashi et al., US 4,528,340.

The claimed invention relates to grafting or epoxidizing natural rubber which has been deproteinized. The individual procedures for grafting, epoxidizing and deproteinizing rubber and the advantages of each are generally known and the present coupling of procedures is deemed obvious for the additive effect. More directly, Yasuyuki teaches deproteinizing natural rubber (measured as weight percent nitrogen) to nitrogen levels below 0.02% by weight to remove allergens and enhance physical properties [page 2, line 11 - page 3, line 11; page 10, Table 1, Example 1; claim 2,]. "By almost completely eliminating non-rubber components, an advantageous material for producing rubber products which suffer from little energy loss and have excellent mechanical properties, improved crepe characteristics and improved aging resistance, can be provided." [page 3, lines 3-6]. The deproteinized rubber also possesses excellent processing and mechanical characteristics [page 24, lines 1-27]. Kondo teaches enhancing the

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physical properties and appearance of natural rubber by grafting with the instant monomers [column 2, line 61 - column 3, line 49; column 4, lines 24-28]. There is no limitation on the proportion of rubber to grafted monomer, however, a 3-60 % range of rubber content by weight is preferred [column 3, lines 30-34], which is sufficiently close to the present graft ratio range of 26.5-36.7 [paragraph bridging pages 11 and 12 of appellant's disclosure] to render the embodiment obvious. In this regard the examiner takes notice that grafting ratio efficiencies of 62.7% or more are typically achieved with the instant components by those of ordinary skill in the art. See e.g. the prior art made of record but not relied upon below. The claimed range is therefore obvious and not deemed to impact patentability. It is generally known in the art to epoxidize rubber to enhance properties such as hydrophilicity. Hayashi e.g. teaches epoxidizing rubber in the range of 5-60% [column 3, lines 3-25] while Burlett teaches epoxidizing rubber in the range of 15-85% [column 2, lines 5-17] which falls within the range set forth by appellants at page 13, last paragraph, of the disclosure. Kondo or Hayashi or Burlett differs from the claimed invention by not disclosing deproteinized rubber.

It would have been obvious to prepare a grafted or epoxidized rubber from deproteinized rubber in the expectation of realizing enhanced physical properties, enhanced mechanical properties and reduced amounts of allergens because the means of preparing such a product and the advantages thereof were all known at the time of the instant invention. Stated otherwise, it would have been obvious to graft or epoxidize the rubbers of Yasuyuki in the expectation of enhancing physical properties, mechanical properties, aging, appearance and/or hydrophilicity

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because Kondo or Hayashi or Burlett teaches the embodiments for the same kinds of rubbers disclosed by Yasuyuki.

5.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Imai et al., US 5,189,108 [column 3, line 44 - column 4, line 27; column 5, lines 23-40; column 11, line 36 - column 12, line 2], Henton et al., US 5,089,557 [column 2, line 30-column 3, line 13], and Kimura et al., US 5,834,563 [column 3, line 31 - column 4, line 3; column 4, lines 54-63; column 7, lines 45-67; Table 1, line 23] teach grafting efficiencies within the present claims.

6.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Zitomer whose telephone number is (703) 308-2461. The examiner can normally be reached Monday through Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful David Wu can be reached at (703) 308-2450. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 (before final) and (703) 872-9311 (after final).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2351.



FRED ZITOMER, PhD
PRIMARY EXAMINER
ART UNIT 1713

Zitomer/fz
December 8, 2002